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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,689	08/23/2001	Young-Bin Im	P56540	8403

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Robert E. Bushnell
Suite 300
1522 K Street, N.W.
Washington, DC 20005-1202

EXAMINER

ROY, SIKHA

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/934,689

Examiner

Sikha Roy

Applicant(s)

IM ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 11 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-5, 8-13, 22 and 23 is/are rejected.
- 7) ☐ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) 14-21 and 24-27 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 23 August 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

Applicant's election with traverse of Group I in Paper No. 5 is acknowledged. The traversal is on the ground(s) that Groups I and II are not distinct because Group I is drawn to claims 1-13 and linking claims 22,23 and Group II is drawn to claims 14-21 and linking claims 24, 26. This is not found persuasive because the linking claims 22 and 23 in Group I are claiming the product of a mask for a color cathode ray tube including a method (i.e. a process) of making mask, consequently, claim 22 and 23 are considered "product-by-process" claim. In spite of the fact that a product-by-process claim may recite only process limitations, it is the product and not the recited process that is covered by the claim. Group I is essentially drawn to the claims reciting limitations of the product of mask of a color cathode ray tube. The restriction requirement is still deemed proper and is therefore made FINAL.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first distance of the first center, second distance of the second center of the first slot from central region and first length by which first center and second centers are separated as claimed in claim 3 must be shown or the feature(s) canceled from the claim.

The third distance of the first center, fourth distance of the second center of the second slot from central region and second length by which first center and second

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centers are separated as claimed in claim 5 must be shown or the feature(s) canceled from the claim.

No new matter should be entered.

The drawings in Fig. 6 and Fig.8 are objected to because of the following informalities.

The holey portion 21 (as in specification page 13, line 11) is not shown in Fig. 6.

The etching boundary 57 (in specification page 14 line 19, page 15 line 1) is not shown in Fig. 8.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1,3 and 9 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting over claims 2,9 and 18 respectively of copending Application No. 09/836,550. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

Regarding claim 1 in the instant application and claim 2 in Application No. 09/836,550 both claim a mask for a color cathode ray tube comprising plurality of strips being parallel to each other being separated by a predetermined distance, plurality of bridges connecting adjacent strips defining slots, slots being penetrated by electron beams, bridges being indented to a predetermined depth from the top surface the thickness of the bridge being smaller at the center than the outer portion of the bridge.

Regarding claim 3 in the instant application and claim 9 in Application No. 09/836,550 both claim for a slot located in the periphery region, the first center at the beam entering side is shifted toward the center compared to the second center at the beam emitting side.

Regarding claim 9 in the instant application and claim 18 in Application No. 09/836,550 both claim the widths of the slots at the beam emitting side being wider than that at the beam entering side.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 3,883,770 to Yamada et al.

Referring to claim 1 Yamada discloses (Fig. 1) a mask (color selecting member) 1 for a color cathode ray tube comprising plurality of strips being parallel to each other and being located at predetermined intervals, a plurality of bridges 3 connecting adjacent strips to each other and forming slots 2 extending from first surface (electron beam exiting surface) to second surface (electron beam entering surface) , the slots being penetrated by electron beams. Yamada further discloses (Fig. 4 column 2 lines 60-68) bridges 3 with indentation (reduced height) are etched such that the portion of the bridge are removed resulting in indentation to a predetermined depth from the mask first surface whereas the portion of the bridge on the second surface are not etched and

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therefore the thickness of the mask at central portion of the bridge 3 is inherently thinner than the outer portion.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5,9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 3,883,770 to Yamada et al. and further in view of U.S. Patent 5,856,725 to Ueda.

Claim 2 differs from Yamada in that Yamada does not exemplify the first slot at the second surface (electron entering surface) having a first center not aligned with the second center on the first surface (electron exiting surface).

Ueda in analogous art of color cathode ray tube discloses (column 2 lines 1-20) in Figs. 3 and 5 that the first center CS of the slot at the second surface is not aligned with the second center CL of the slot at the first surface. Ueda further discloses (column 4 lines 25-37) this configuration of the slots formed in the shadow mask intercepts or reduces the directly incident light while allowing the reflected light to pass through and enhances the quality of fluorescent surface.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the slot of Yamada by the one having first center at the electron

beam entering surface deviated from the second center at the electron beam exiting surface as taught by Ueda for reducing directly incident light while allowing the reflected light to pass through and thus enhancing the quality of fluorescent surface.

Regarding claim 3 Ueda discloses (Fig. 5) that for the slot located in the periphery region the first center CS of the slot at the second surface is at first distance from the central region and the second center CL is at a second distance from the central region measured parallel to the surface of the mask. Ueda discloses that the centers CS of small holes in electron entering surface are deviated toward the center and hence the first length is smaller than the second length.

Claim 4 recites the same limitations as of claim 2 for a second slot and hence is rejected for the same reason.

Referring to claim 5 Ueda discloses (column 3 lines 64-67) the deviation of the center CS from the center CL sequentially increases from the center toward the periphery of the mask. Hence for the second slot located at a position close to central region the second length which is the difference between the third distance of the first center CS from the central region and fourth distance of the second center CL from the central region is smaller than the first length in case of the slot located toward the periphery of the mask.

Regarding claim 9 Ueda discloses (Figs. 6A and 6B) each one of the slots (26 or 42) formed by bridges having a first curved portion (26L, 42L) adjacent to the upper surface of the mask and having a second curved portion (26S) adjacent to the lower surface of the mask, the first curved portion having first width and second curved portion

having second width extending in the length direction of the strips and measured perpendicularly to the length direction of the strips, first width being larger than the second width.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 3,883,770 to Yamada et al. and further in view of U.S. Patent 4,227,115 to Elshof et al.

Claim 8 differs from Yamada in that Yamada does not exemplify the vertical length of the first bridges near the central region of the mask being smaller than the vertical length of the second bridges near the periphery as measured substantially parallel to the length direction of the slots.

Elshof in pertinent art of shadow mask discloses (column 2 lines 3-8 Fig.4) the vertical length of the bridges near the central region 15 is smaller than the vertical length of the bridges near the periphery 14 measured substantially parallel to the length direction of the slots. It is further noted that the brightness distribution in the picture and also the strength of the mask are improved for this design of the bridges.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the vertical length of the bridges of Yamada so that the vertical length of the first bridges near the central region of the mask is smaller than the vertical length of the second bridges near the periphery as measured substantially parallel to the length direction of the slots as taught by Elshof for improving the strength of the mask and brightness distribution.

Claim 10 essentially recites the same limitation as of claim 2 and hence is rejected for the same reason. (see rejection of claim 2)

Claim 11 essentially recites the same limitation as of claim 3 and hence is rejected for the same reason. (see rejection of claim 3)

Claim 12 essentially recites the same limitation as of claim 4 and hence is rejected for the same reason. (see rejection of claim 4)

Claim 13 essentially recites the same limitation as of claim 5 and hence is rejected for the same reason. (see rejection of claim 5)

Regarding claims 22 and 23, here the Applicant is claiming the product of mask including a method (i.e. a process) of making (forming) the mask, consequently, claims 22 and 23 are considered "product-by-process" claims. In spite of the fact that a product-by-process claim may recite only process limitations, it is the product and not the recited process that is covered by the claim. Further, patentability of a claim to a product does not rest merely on the difference in the method by which the product is made. Rather, it is the product itself which must be new and not obvious. As such, no patentable weight has been given to the process recited in claims 22 and 23 (see MPEP 2113).

Allowable Subject Matter

Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 6 the prior art of record neither shows nor suggests a mask with plurality of indented bridges with all the limitations as claimed and particularly the limitation comprising the first width of the first bridges near the center being smaller than the second width of the second bridges near the periphery the widths being measured perpendicular to the length direction of the slots.

Regarding claim 7 the prior art of record neither shows nor suggests a mask with plurality of indented bridges with all the limitations as claimed and particularly limitation comprising first bridges near the center being indented to a predetermined depth, deeper than the second bridges near the periphery.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art references are cited to show the state of the art with respect to slot-type shadow masks for a color cathode ray tube.

US 2001/0007406 to Kim.

U.S. Patent 6,107,729 to Banno.

U.S. Patent 6,072,270 to Hu et al.

U.S. Patent 5,523,647 to Kawamura et al.

U.S. Patent 5,309,059 to Kume et al.

U.S. Patent 3,916,243 to Brown.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.
Sikha Roy
Patent Examiner
Art Unit 2879


ASHOK PATEL
PRIMARY EXAMINER